Hazard Mitigation Plan Berlin, NH July 2012

1927 Flood Downtown Berlin, NH
photo credit: berlinnh.home.comcast.net - Gerry Savard

Developed by the City of Berlin Hazard Mitigation Plan Committee Berlin Emergency Management

CHAPTER 1
INTRODUCTION

Authority

This Hazard Mitigation Plan was prepared in accordance with the Disaster Mitigation Act of 2000 (DMA), Section 322, and Mitigation Planning. Accordingly, this All Hazard Mitigation Plan will be referred to as the "Plan".

Funding Source

This Plan was funded in part by the Office of Emergency Management, with grants from Emergency Management Assistance Grant as well as with matching funds from the City of Berlin, NH.

Purpose

The Berlin Hazard Mitigation Plan is a planning tool to be used by the City of Berlin, as well as other local, state and federal governments, in their effort to reduce the effects from natural and man-made hazards. This Plan does NOT constitute any section of Berlin's Master Plan or Zoning Ordinance.

Introduction

On October 30, 2000, the President signed into law the Disaster Mitigation Act of 2000 (DMA 2000). The ultimate purpose of DMA 2000 is to:

- Establish a national disaster hazard mitigation program that will reduce loss of life and property, human suffering, economic disruption, and disaster assistance costs resulting from disasters, and
- Provide a source of pre-disaster hazard mitigation funding that will assist States and local governments in accomplishing that purpose.

DMA 2000 amends the Robert T. Stafford Disaster Relief and Emergency Assistance Act by, among other things, adding a new section, 322 - Mitigation Planning. This places new emphasis on local mitigation planning. ***It requires local governments to prepare and adopt jurisdiction-wide hazard mitigation plans as a condition of receiving Hazard Mitigation Grant Program (HMGP) project grants.*** Local governments must review and if necessary, update the mitigation plan annually to continue program eligibility.

Why Develop a Mitigation Plan?
The full cost of the damage resulting from natural hazards--personal suffering, loss of lives, disruption of the economy, loss of tax base--is difficult to measure. Our state is subject to many types of natural hazards: floods, hurricanes, nor'easters, winter storms, earthquakes, tornadoes and wildfires, all of which can have significant economic and social impacts. Some, such as hurricanes, are seasonal and strike in predictable locations. Others, such as floods, can occur anytime of the year and almost anywhere in the state.

Scope of the Plan

The scope of this Plan includes the identification of natural hazards affecting the City, as identified by the Hazard Mitigation Planning Committee. The hazards were reviewed under the following categories as outlined in the State of New Hampshire's Hazard Mitigation Plan:

I. **Flood, Drought, Extreme Heat and Wildfire**
II. **Geological Hazards** (Earthquake, Landslide, Subsidence, Tsunami, Volcanism, Geomagnetism and Radon)
III. **Severe Wind** (Tornado, Hurricane, Thunderstorm, Downburst, and Lightning)
IV. **Winter Weather** (Snow, Ice Storm, Extreme Cold)
V. **Wildfire Issues and Mitigation**
VI. **Community Housing Hazardous Stock**

In addition, the Committee discussed issues related to man-made hazards. Further development of this topic should be included in any future revisions to this Plan.

Methodology / Planning Process

The Hazard Mitigation Planning Committee developed the contents of this plan through a Hazard Mitigation Planning Process recommended by template provided by the State of NH Emergency Management program. The Methodology / Planning Process includes four primary functions:

1. Committee work to review and update the plan.
2. Committee presentation of plan to the public through a public hearing and the Berlin City Council for review. This was publicized through the local newspapers that are available free in Berlin and the surrounding communities of Gorham, Shelburne, Randolph, Milan and Dummer.
3. Submission of the plan to the State and FEMA for approval.
4. Bring plan to Berlin City Council for final approval and acceptance.

The following chart is a summary of the meetings the Committee held to update the plan.

Meeting	Date	Topics Discussed
1	9/27/07	Introduction to process Review & Set Hazard Mitigation Goals Review & Identify Hazards and Review Risk Analysis
2	10/11/07	Review and Amend Base Maps and Critical Facilities List Review and Amend Hazard Identification List Review and Amend Critical Facilities List
3	10/25/07	Capability Assessment Mitigation Project Identification and Review Identification guided by following factors; □ Prevention measures □ Property Protection □ Protection of Natural Functions of the Floodplain □ Emergency Services □ Structural Projects □ Public Information Activities Develop a lists of Goals and Objectives
4	11/10/07	Execute the STAPLEE Measure on the mitigation plan
5	12/5/07	Final adoption of the plan by Committee
6	Pending proposed 2/10	Public Hearing /
7	Pending proposed 2/10	Submission to State of NH OEM FEMA Approval City Council Adoption

Step 1: Form a Hazard Mitigation Planning Committee

Emergency Management Director Randall Trull developed the committee from city department heads, staff and other contributors to the previous planning committee.

Step 2: Review of Hazard Mitigation Goals

At the first working meeting the committee reviewed the previous and identified new City Hazard Mitigation Goals. The committee adopted Hazard Mitigation Goals adapted from the State of NH in its Natural Hazards Mitigation Plan with a few minor changes. This first step is extremely important in helping the committee understand the purpose of the Plan and the direction it should go. (See the end of this chapter for the “Hazard Mitigation Goals of the City of Berlin, NH”.)

Step 3: Hazard Identification

The Committee members identified natural hazards that have or could potentially affect the City of Berlin which were:

Riverine flooding	***Ice jam flooding***	***Dam breach***
Drought	***Extreme heat***	***Wildfire***
Earthquake	***Landslide***	***Geomagnetism Radon***
Tornadoes	***Hurricane***	***Downburst***
Lightning strikes	***Winter weather***	***Man made hazards***
Public Health Emergency	***All Hazard***	

The purpose of this step was to "map the hazards". Each hazard was discussed and reviewed for its' past history as well as potential occurrence. The results of this step can be found in Chapter 3 and on the "Hazard Identification Maps".

Step 4: Critical Facilities Analysis

The Committee members identified critical facilities in four sections: Facilities needed for Emergency Response; Facilities not necessary for emergency response; Facilities and populations the City wishes to protect in the event of a disaster; and Potential resources for services or supplies in the event of a disaster. The "Critical Facilities Map" in Chapter 4 identifies a portion of the critical facilities.

Step 5: Capability Assessment

The Committee members identified what plans and policies are already in place in the City that reduces the affects of hazards. The results of this step can be found in Chapter 5.

Step 6: Review the Initial List of Goals

The Committee reviewed the list of Hazard Mitigation Goals that were established during the first working Committee Meeting. This step gave the Committee members direction when they began developing their list of mitigation measures.

Step 7: Develop bjectives

The Committee reviewed and addressed the goals established at the first working committee meeting. For each hazard the Committee identified the following objectives to address each goal:

Programs & Policies	*Training*	*Public Education*
Structural & Engineering	*GIS Products*	*Equipment Purchase*

Step 8: Develop Specific Mitigation Measures

As a result of the objectives identified in step 7, the committee brainstormed specific projects or mitigation measures to address each hazard under the direction of the objectives and goals. The measures identified in this brainstorming session can be found in the "Categorized Mitigation Projects" in the beginning of Chapter 6. These projects were then prioritized for each objective. The result is a list of "Prioritized Hazard Mitigation Projects" found at the end of Chapter 6.

Step 9: Adopt and Implement the Plan

The Committee members had the opportunity to review and approve each section of the plan as it was completed. After acceptance by the committee, the Plan was submitted to the Office of Emergency Management and FEMA Region 1 for formal Approval. The City Council formally approved the Plan on _____ The letters of approval from OEM and FEMA Region 1 can be found in the Appendix.

With respect to any ongoing mitigation projects, the lead and support agencies/people for such activity will be tasked with implementing the Plan's mitigation projects. The Committee approved the "Prioritized Mitigation Projects" list, which identifies responsibility, funding/support and a timeframe for each of the prioritized projects. The Emergency Management Director should be tasked with requesting annual reports as to the progress of each project.

Step 10: Monitor and Update the Plan

It is important that this plan be monitored and updated annually or after a presidentially declared disaster. Chapter 7 specifically addresses this issue. To be in compliance with FEMA requirements the plan will be officially monitored and updated every 5 years.

View of downtown Berlin – Looking West[1]

[1] Photo Courtesy of www.greatnorthwoods.org

Hazard Mitigation Goals
City of Berlin, NH

To improve upon the protection of the general population, the citizens of the City of Berlin and guests, from all natural and man-made hazards.

To reduce the potential impact of natural and man-made disasters on the City of Berlin's Emergency Response Capability.

To reduce the potential impact of natural and man-made disasters on Critical Facilities in the City of Berlin.

To reduce the potential impact of natural and man-made disasters on the City of Berlin's infrastructure.

To improve Emergency Preparedness and communication network.

To improve the City of Berlin's Disaster Response and Recovery Capability.

To reduce the potential impact of natural and man-made disasters on public and private property.

To reduce the potential impact of natural and man-made disasters on the City of Berlin's economy.

To reduce the potential impact of natural and man-made disasters on the City of Berlin's natural environment.

To reduce the City of Berlin's potential liability with respect to natural and man-made hazards.

To reduce the potential impact of natural and man-made disasters on the City of Berlin's historic treasures and interests as well as other characteristics which add to the quality of life of the citizens and visitors of the City of Berlin.

To identify, introduce and implement cost effective Hazard Mitigation measures so as to accomplish the City of Berlin's Goals and Objectives and to raise the awareness of, and acceptance of Hazard Mitigation.

To reduce greater impact of a Wildfire to the community through the Wildlife Mitigation Plan.

To reduce communication and transportation isolation.

To respond to the recent mill closure and the utilization of potentially hazardous land remaining.

To develop and provide strategies and plans to respond to a Public Health Emergency

To work in conjunction and cooperation with the State of New Hampshire's Hazard Mitigation Goals.

Acknowledgements

The Berlin Emergency Management Director and the City Council would like to thank the following people for their time and effort spent to complete this Berlin Hazard Mitigation Plan:

Berlin Hazard Mitigation Planning Committee

Patrick MacQueen, Interim City Manager Richard
LaFleur, City Council / Public Representative Laura
Viger, Emergency Management Director Pamela
Laflamme, Berlin City Planner
Barney Valliere, Berlin Police Department
Randall Trull, Berlin Fire Chief
John Donaldson, Berlin School District / Public Representative
Roland Viens, Berlin Water Works
Andre Caron. Housing Coordinator
Chip Carpenter, Building Inspector
Heidi Lawton, NH BEM
Elaine Belanger, NH Public Health Network / Public Representative

Many thanks to all the hard work and effort from each and every one of you.
This plan would not exist without your knowledge and experience.

Thank you!

CHAPTER 2
COMMUNITY PROFILE

Introduction

The City of Berlin is located in the southeastern portion of Coos County in northern New Hampshire. It is approximately 100 miles north of the City of Concord and 50 miles west of the Town of Rumford, Maine. Berlin is bordered by the Town of Milan to the north, the unincorporated area of Success to the east, the Town of Randolph and the Town of Gorham to the south, and the unincorporated area of Kilkenny to the west.

Berlin is situated in the midst of the White Mountains. The lowest elevations of approximately 1,000 feet are found near the center of the community, while the highest elevation of the 3,890 feet in the City is found on Weeks Mountain. The land area of Berlin is 57.1 square miles, with under half located within the White Mountain National Forest.

Berlin is commonly referred to as “the City that trees built”. Agriculture is limited by the topography of the study area, which is steep and broken with ledges and rock outcroppings in many places. The area was settled in 1771 and soon thereafter supported a thriving population and lumber industry. The community was incorporated in 1829 and was named after the City of Berlin, then the capital of Germany.

The Androscoggin River enters Berlin in a rather wide valley. The valley floor is comprised of rolling hills and intervale land and is bordered by the mountains of the Presidential Range. The river travels about 5.5 miles through Berlin.

The Dead River is a relatively short stream that flows four miles southeast through Berlin to join the Androscoggin River. As the river travels downstream through Berlin, it flows through a flat, swampy area which extends to the vicinity of Rocky Lane. The stream then flows below Hillside Ave, over a rocky ledge to the bridge on a short dead end street, Off York Street. From this point, to where the river goes under Pleasant Street, the stream is channelized, locally known as “Moxie Alley”. Downstream from Main Street, the stream passes through a chasm to the Androscoggin River.

Jericho Brook is a typical mountain stream with a steep slope and a narrow floodplain. It flows through a wooded area which is sparsely populated. The brook does not contribute to floods due to the regulatory dam on it.

Bean and Horne Brooks generally have a steep slopes and narrow valleys. They are not subject to extensive flooding, except near their mouths.

DISASTER RISK

The City of Berlin is susceptible to a variety of natural hazards including flooding, river ice jams, severe winter storms, hurricanes, and other hazards. Based on the history of the hazards described in Chapter 3, the committee determined the following Probability Matrix.

Probability Matrix

Hazard	Probability of Occurrence		
	Likely (3)	Possible (2)	Unlikely (1)
Riverine Flooding	3		
Ice Jam Flooding			1
Dam Breach			1
Drought		2	
Extreme Heat			1
Wildfire		2	
Earthquake			1
Landslide			1
Geomagnetism			1
Radon		2	
Tornadoes			1
Hurricane		2	
Downburst	3		
Lightning Strike	3		
Winter Weather	3		
Man-Made Hazards		2	
Public Health All Hazard		2	

National Flood Insurance Program (NFIP)

The City of Berlin has been participating in the National Flood Insurance Program since 1982. There are approximately 46 structures located in the FEMA designated Special Flood Hazard Areas as identified on the 6/15/82 NFIP maps for Berlin, NH. There are 3 structures in Berlin that have NFIP flood insurance policies with no repetitive loss properties. There has been one claim made since 1978. The City is considering applying to become a participant in the Community Rating System.

BERLIN / COOS COUNTY RISK ANALYSIS

Information in this section comes from local information and the State of NH Natural Hazard Mitigation Plan 2004 available at the NH Emergency Management Services website, http://www.nh.gov/safety/divisions/hsem/ This analysis reflects a county perspective, not solely a Berlin local perspective.

HAZARD	***DESCRIPTION***
Flooding	No major flooding occurs in the City of Berlin. The topography of the City results in very little property being in danger of flooding. There are a few properties along the Androscoggin River that have some limited flooding. Coos is divided with the Connecticut River watershed to the West and the Androscoggin River Watershed to the East.
Drought	The County was impacted by the Drought event of the 1960's, as was the rest of the State. At the time of the preparation of this Plan, the editor has located no specific data as to the losses from Drought events for this county.
Wildfire	Significant debris remains in the forests around and in the city at all times due to the large forested nature if the community. Given the heavy forest cover countywide, this hazard type is of particular concern during dry periods. SEE ANNEX: BERLIN WILDFIRE PLAN
Earthquake	No evidence of earthquake in Berlin was available at the time of developing this plan. New Hampshire lies in a zone of moderate seismic vulnerability generally. Berlin lies approximately in the middle of Coos County. Areas to the north of the county lie close to the St. Lawrence River Valley and areas of very significant seismicity. Toward the Southeastern portion of the county is the Ossipee Range, the center of the highest seismicity within the boundary of the State.
Landslide	Indications are that the land formations throughout large areas of this county predispose some areas to this hazard type. At the time of the development of this Plan the committee was unable to locate any specific data with respect to this hazard type in Berlin specifically
Radon	From available data and maps from the NH DES, it would appear that Radon is a relatively High risk in Berlin. NHDES notes Berlin rates at 40.0-49.9% of test at or above 4.0 pCi/L
Tornadic Activity	Data from www.tornadoproject.com reports the following for the county, but not specifically for Berlin. date event # time dead inj F Scale County number(s) Coos County Tornadoes JLY 09, 1956 002 1852 0 0 F1 007 JLY 13, 1966 001 1420 0 0 F1 007 AUG 27, 1974 001 1800 0 0 F0 007 AUG 08, 1980 001 2030 0 0 F0 007
Hurricane	The City has experienced high winds from some hurricane events but is at a more significant risk to flooding from the associated rainfall from hurricanes.
Downburst	Downburst last occurrence 2002
Lightning	At the time of the submission of this Plan, the editor was unable to locate any City specific data with respect to this hazard type.
Severe Winter Storm	Severe Winter storms occurred on 3/16/93, 3/2001, 1/15/04, 3/30/05
Ice Storm	Significant ice storm took place in 1998 with debris remaining in the forested and wooded areas of the city.

Avalanche	This County has the highest risk for avalanche hazards due to heavy snowfall amounts and slopes ranging from 25 to 50 degrees. We have found no evidence of recent avalanches at the time of this plans development

DISASTER PREVIOUS OCCURRENCES

This information has been obtain through local research and State of NH Natural Hazard Mitigation Plan 2004 available at the NH Emergency Management Services website, http://www.nh.gov/safety/divisions/hsem/ These plans reflect a county perspective, not solely a Berlin local perspective.

Previous Occurrence Matrix

Hazard	***Date***	***FEMA Disaster #***	***Description***
Riverine Flooding			
Ice Jam Flooding	1/3/96 1/15/98	FEMA-1077-DR FEMA-1199-DR	Storms / Floods Ice Storm
Dam Breach	NA		
Drought	NA		
Extreme Heat	NA		
Wildfire			
Earthquake	NA		
Landslide	NA		
Geomagnetism	NA		
Radon	NA		
Tornadoes	NA		
Hurricane	NA		
Downburst	7/2002		Memorial Athletic Field, Destroyed pine trees on park
Lightning Strike			
Winter Weather	3/16/93 3/2001 1/15/04 3/30/05	FEMA-3101-EM FEMA-3166-EM FEMA-3193-EM FEMA-3208-EM	Heavy Snow Conditions Snow Emergency Snow Emergency Snow Emergency
Man-Made Hazards	NA		
Public Health All Hazard	3/09-2/10		H1N1 Flu Declaration
OTHER: Severe Storm,	8/29/90	FEMA-789-DR	Severe Storm, Winds

Wind			
OTHER: Severe Storm, Flooding	4/1507-4/23/07	FEMA-1695-DR	Severe Storm, Flooding

Estimated Hazard Losses

In order to determine estimated losses due to natural hazards in Berlin, each hazard area was analyzed with results shown below. Human losses are not calculated during this exercise, but could be expected to occur depending on the type and severity of the hazard. These figures exclude both the land value and contents value of the structure. According to the 2001 City Report, the "Summary of Taxable Property" the value of all taxable buildings, NOT including exempt structures such as schools and churches, is $235,420,472 The data below was calculated using FEMA's *Understanding Your Risks: Identifying Hazards and Estimating Losses,* August 2001.

Flooding: (Riverine, Ice Jam, Hurricane & Dam Breach) $10,000 to $20,000,000

As of 1998, the City of Berlin had approximately 46 residential structures located in the FEMA designated 100-year floodplain. The estimated population within these structures is 300. Riverine flooding and ice jam flooding would affect primarily the 100-year floodplain. Much of the damage from these two hazards could be expected to occur not only on privately owned structures, but also on public property, such as roads and bridges. Dollar estimates from this type of hazard can range widely depending on the nature and severity of the hazard. A small to medium sized event could be expected to produce a loss from $10,000 to $5,000,000.

Assuming 50% of structures in the floodplain sustain 30% damage, the estimated cost of repairing or replacing these homes after a major flood event is approximately $500,000. This estimate assumes a one or two story house with a basement, and a flood depth of four feet. Infrastructure damage could also be extensive, including roads, bridges, utilities, towers, etc. If a major devastating flood were to occur, the damage to properties located within the floodplain could be expected to exceed this estimated amount. The cost-benefit ratio for these items makes it clear that Berlin will benefit greatly from any flood mitigation measures that will help to reduce the losses that typically occur during a major flood event.

Dam and/or breach failure could have catastrophic results in Berlin, including loss of human life. As seen in the inundation maps in Appendix C, a dam breach would affect more than the 46 structures in the 100-year floodplain. Assuming twice that number was destroyed, along with major losses to utilities and public properties, the total damage could exceed $20,000,000.

A major hurricane can cause significant damage to a community. Since Berlin is inland from the coast, but is noted as being within a hurricane susceptible region, less damage could be expected to occur here than in coastal areas. Assuming an assessed structural valuation of approximately $75,000, damaging 30% of the 46 structures in the 100-year floodplain, flooding could result in losses of approximately $1,000,000. This would not include other damages expected to occur on public property within the community.

Tornadoes $10,000 to $1,000,000

The Fujita Scale is used to determine the intensity of tornadoes. Most tornadoes are in the F0 to F2 Class. Building to modern wind standards provides significant property protection from these hazard events. New Hampshire is located within Zone 2 for Design Wind Speed for Community Shelters, which is 160 mph. While it is difficult to assess the monetary impact a tornado may have on a community, the range of damage shown above indicates an approximate amount that could be expected. Tornados rarely occur in this part of the country, so damage from this hazard would not be very likely.

Severe Winter Weather $10,000 to $5,000,000

Nor'easters and ice storms typically vary greatly depending on the amount of snow and ice that accumulates during the storm. The ice storm of 1998 caused much damage to power lines, structures, the surrounding forestry, and the agricultural economy in northern New England and southeast Canada, with 1.1 billion in insurance claims and 35 lives lost due to the storm. These types of storms in Berlin could be expected to cause damage ranging from a few thousand dollars to several million, depending on the severity of the storm.

Forest Fire $180,000 to $30,000,000

A forest fire can strike at any time in any place. Forest fires may be expected to occur during years of drought. Presuming a small to medium size fire that destroys a small number of homes, damage from this hazard could be expected to range from $180,000 to $3,600,000, which would damage or destroy from one to 20 homes or more within the City. The Northern New Hampshire Correctional Facility, which is primarily surrounded by forest, could raise that value to $30,000,000 or more. Damages to other items such as utilities, etc. are not included in this estimate.

Earthquakes $6,000,000 to $30,000,000

Assuming a moderate earthquake occurs in Berlin where structures are not built to a high seismic design level, presuming mostly wood frame construction, it could be estimated that about 1% to 5% of the assessed structural valuation could be lost, including damage to homes and homes that are totally destroyed.

Downbursts $5,000 to 1,000,000

Recent "unofficial" downburst activity occurred in July of 2002. Several trees in the City ballfields and several rooftops were damaged as a result. In addition, several residential homes incurred minor damage to siding and rooftops as well as the need to clear debris. Downburst are unpredictable in New Hampshire, yet there have been many official recordings, some of which caused severe damage to limited areas.

Lightning, Hailstorms, Landslides, Geomagnetism, Radon, Drought, Extreme Heat

No major damage is known to have occurred related to these events, so no potential loss estimate has been prepared for these items.

Public Health All Hazard Emergency

Preparedness efforts are ongoing including drills and exercises. Key strategies include development of an Neighborhood Care Center and fully supply for activation, development of an Acute Care Center and fully supply for activation and development of a Point of Distribution Center and fully supply for activation.

Please note that all of the above figures are only estimates. The amount of damage from any hazard will vary from these figures depending on the extent and nature of the hazard that occurs.

Current Development Trends

"Berlin's land use historically has been influenced by three major factors: the presence of abundant timber, the availability of immense water power and the rugged topography of the land. Settled late by New Hampshire standards (1824), early land uses were subsistence farming (sheep, grain, cows). Grist mills and simple up and down saws began to make use of the water power. But it wasn't until the opening of the railroad in 1852 that Berlin came to the attention of industrialist eager to develop its water power and utilize the area's woodland. Industrial land uses and the accompanying commercial and residential uses grew progressively. Sawmills and pulp mills increase in number and size. By 1900 timber companies owned vast tract of land – over 300,00 acres in one case, with rail lines and rivers feeding timber to the Berlin mills. Water power served to meet the needs of the growing population by providing one of the state earliest electrical systems.

"The formation of the White Mountain National Forest in 1919 changed the use and management of about 50% of the community. The prosperity continued and the population peaked in the 1930's. Major land use changes since that time have not been as dramatic but have seen farmland decrease and residential and commercial land use spread from the urban area of the City outward. A decreased dependency on the river for water power and timber has not had a dramatic impact on land use since the buildings and infrastructure are still being used today."

City Statistics of Interest

Climate: **Temperature** (Fahrenheit): Annual Average 42.0° January Average 15.6° July Average 66.0° **Precipitation:** Annual Average 36.0 in.	Demographics: **Population** **2000** **1990** **1980** **1970** Community ***10,331*** ***11,824*** ***13,084*** ***15,256*** County **33,111** **34,828** **35,014** **34,189**

County:	**RPC:**	**Area:**	**Highest Elevation:**
Coos	North Country Council	57.1 square miles	3,890 feet (Mt. Weeks)

CDBG Eligibility:	**NFIP Membership:**	**CRS Membership:**	**Marine Profile:**
Portions of the City meet Low to Moderate Income Requirements	Since 1982 In Good Standing	Currently not participating	N/A

Population by Age (1990):		Income (1990):		Housing (1998):
5 and under	**529**	Per Capita Income:	**12,172**	2000 Total Housing Units 5,111
5 to 19	**1,914**	Median Household Income:	**25,040**	
20 to 34	**1,590**			
35 to 54	**2,965**			
55 to 64	**997**			
65 and over	**2,336**			
TOTAL	**10,331**			

Largest Employers	Product/Service	Number of Employees
Androscoggin Valley Hospital	Health Care	336
Northern NH Correctional Facility	State Prison	220
Berlin City Dealerships	Auto Dealer	205
City of Berlin	Municipality	170
Issacson Steel	Steel Fabricators	147

CHAPTER 3
HAZARD IDENTIFICATION

What are the hazards and where are they occurring?
Berlin is prone to a variety of natural hazards. These include: riverine flooding, river ice jams, severe wind events (downbursts, hurricane residuals, and tornado activity), wildfire, drought, ice storms, and severe winter storms. The following is a list of natural and manmade disasters, and the areas affected by them, that have or could affect the City of Berlin. These hazards were identified in a brainstorming session with the Hazard Mitigation Planning Committee.

Flooding (Riverine):

The following identifies areas that are historically susceptible to flooding.

1. **Androscoggin River** - EAST Side:
   a. Watson Street: sewage pumping station pumps every thing on east to across river. Private homes on Watson Street have periodic flooding. Berlin Engineering Department has made temporary dykes around the pumping station. It could use a permanent dyke from the railroad down the street. When water is high the water comes out the sewer drainage manhole. With regard to CSO (combined sewer overflow, there have been 11 overflow (over 12,500gal) events within last 5 years on Watson street. Want to keep floodwaters out. (May want to consider buying homes in the area to help).
   b. Near the Irving Station coming on to the road Glen Avenue but not undermining it.
   c. “Berlin wall” – The retaining wall along the Androscoggin from city hall to PSNH Park. This wall is currently being assessed and monitored by PSNH from mason street bridge to head gate at the PSNH Gate House.

d. Brown school and Heritage Park – only on parking lot area. If Pontook dam went it would increase the flooding in this area.
e. Where Bean brook enters the Androscoggin a couple of houses there have problems.
f. Lower Wood Street area.
g. St Anne's cemetery floods on east side of river.
h. Above White Mt. lumber there is a bin/retaining wall on east side. There is a potential for flooding in this area. .
i. Berlin Water Treatment plant floods periodically.
j. The Industrial Park on the east side floods around and in several buildings
k. Bridge on Horne brook

2. Androscoggin River - WEST side:

a. Rotary park on west side of river
b. Major sewer line from dairy bar pumping station to the Technical Institute.
c. New Hampshire Technical Community College
d. Berlin National Guard Armory
e. Route 16 between the armory and town line.

3. **Dead River Starting at the Confluence with the Androscoggin**:

a. Runs under the former Gills Flower (map/lot 119/121) and sometimes floods the southern half of the building cellar.

b. The"Moxie Alley". the area between Main and Pleasant Street has had a lot of studies due to its unique building pattern directly over the Dead River and the repetitive flooding problems that have occurred in this downtown location. From the corner of Mechanic Street up to the Hallmark Store (map/lot 119/49) there is seasonal flooding in the following buildings:

WEST SIDE OF MAIN STREET

Map/Lot	119/42	Poulin, Richard L	55-71 Main Street
Map/Lot	119/43	Rivard, Gene	67 Main Street
Map/Lot	119/44	LaFrance, Ronald	73-75 Main Street
Map/Lot	119/45	LaFrance, Ronald	83 Main Street
Map/Lot	119/46	Gallagher, Robin	67-69 Main Street
Map/Lot	119/47	Poulin, Richard L.	91-95 Main Street
Map/Lot	119/48	Berlin Real Estate & Dev. Corp	97 Main Street
Map/Lot	119/49	Poulin, Gerard	107-109 Main Street
Map/Lot	119/124	Cornerstone Housing Noth, Inc	45-53 Main Street

EAST SIDE OF MAIN STREET

Map/Lot	118/121	Godbout, Rachel	42 Main Street
Map/Lot	118/122	Gill's Flowers, Inc.	52 Main Street

c. At Rt.16 North / Main Street and the Dead River "Bridge" under Main Street, the road is settling in front of the Map/Lot 119/43 building.
d. Corner of Mechanic to Bickford on Pleasant Street side is prone to flooding.

EAST SIDE OF PLEASANT

Map/lot 119/34	Hamanne, Gerard E Trustee Wallinford, Richard	126 Pleasant Street
Map/Lot 119/35	Micklejohn, Clayton	122 Pleasant Street
Map/Lot 119/36	Charest, Paul & Dolores	112 Pleasant Street

e. Hillside Ave Bridge has drainage problems from the street and bridge is old.
f. Wall on the arena at the end of Willow Street and bottom of Park Street.
g. Residential land and RR track on south side of Dead River.
h. Public works garage has potential for flooding
i. Issacson structural steel plant has potential for flooding
j. Former granite state plant
k. Water line behind Issacson that is buried above ground is bermed and susceptible to eroding during high water.

3. Bean Brook

possibility of flooding seasonally and at times of high water.

Map/Lot 136/49	Gagne, Derrick L.	21 Wood Street
Map/Lot 136/48	Tremblay, Therese	25 Wood Street
Map/Lot 136/5	Marois, Colleen E.	15 Wood Street
Map/Lot 136/4	Harvey, Douglas W.	9 Wood Street
Map/Lot 136/3	Marois, Colleen E.	Wood Street

Historical Summary:

a. Spring of 69 there was heavy snowmelt that caused major flooding everywhere.
b. Berlin is steep so it is not prone to get citywide flooding but have a lot of small tributaries that are flashy. 8th street (get Laura's pictures) Sharon Ave this year and Harding Street are examples. The committee should identify tributaries that cause localized flooding.
c. Also these smaller tributaries are susceptible to freezing and moving the water out of its banks. 1st Ave Brook goes through cellars and back yards. (Jim could help identify these tributaries.)
d. June and July of 1998 saw major flooding.

Flooding (Ice Jams):

The flood control dams on the Androscoggin take care of breaking up the ice prohibiting ice jams. The flow of the Dead River generally prohibits dangerous ice jams.

Flooding (Dam Breach):

The following Class C dams are located on the Androscoggin and Dead River. All of the dams have Emergency Action Plans, which include inundation maps. The inundation pathway mostly follows the 100-year floodplain. (See Appendix???? for the inundation pathway map.)

a. Aziscohos
b. Upper and middle Richardson dams
c. Errol dam

d. Pontook
e. Sawmill
f. Riverside
g. Smith Hydro
h. Cross power
i. Jericho Dam on Dead River

Drought:

a. According to the State Hazard Mitigation Plan, Coos County has a moderate potential for drought.
b. Coos County was not designated in drought of 2001-2002.
c. Mt. Forest and Mt. Jasper, Cates Hill and Success (which Berlin Fire Department covers) are potential sights that are susceptible due to no roads and lack of water availability.
d. If in national forest the USFS is the primary contact. (Also note: the Godfree dam is in the national forest.)
e. High Fuel load areas susceptible during a drought include Success, Cascade Falls and Cates Hill.

Extreme Heat:

There have been no extended periods of extreme heat in the City of Berlin. However, the following are areas and populations that would be at higher risk during and extended period of extreme heat.

Areas at risk:

a. Elderly population and children

Schools –
Brown Elementary School, Main Street
Bartlett Elementary School, Mt. Forist Street
Berlin Junior High School/Hillside Elementary, Hillside Avenue & State Street
Berlin High School, Willard Street
St. Micheal's School, Blanchard Street

Elderly Housing and Services
Brookside Park, Hutchins Street
St. Regis House, Pleasant Street

b. Power system statewide can be burdened and limit power in the Berlin area.
c. Communications would be affected due to power load.
d. Possible RR derailment

Wildfire:

According to the State of NH Hazard Mitigation Plan, Coos County is at high risk to wildfire. The City of Berlin is at moderate risk but the surrounding areas are high risk. Power lines would be affected as they go through the forest. Accessibility is a major concern.

If a wildfire came close to the City, the following areas would be at higher risk due to their proximity to significantly wooded areas:

a. Androscoggin Valley Hospital, Page Hill Road
b. Coos County Nursing Home, Cates Hill Road
c. Berlin High School, Willard Street

The following areas have been identified by the Hazard Mitigation Planning Committee to be at high risk:

a. Mt. Forest
b. Mt. Jasper
c. Success
d. High Fuel Load Areas

SEE APPENDIX : The Berlin Wildfire Mitigation Plan

Earthquake:

Coos county is at moderate risk to earthquakes. Historically, there have been 2 events in the Berlin area. In 1988 a 4.0 magnitude earthquake had an epicenter 5 kilometers northeast of Berlin. In 1989 there was a 4.1 magnitude earthquake near Berlin.

Areas at risk:

a. Water and Sewer systems.
b. Bridges
c. Portland Pipeline (which is 6' underground)
d. Smoke Stack at the former paper mill property
e. Masonry buildings
f. Dams

More than 260 earthquakes have been felt in New Hampshire in recorded history. The earliest damaging event occurred on October 29, 1727 with an epicenter off the coastline of New Hampshire or Maine. This was followed by a quake of at least equal intensity in 1755 known as the Cape Ann epicenter with a magnitude estimated to be 5.8. The strongest quake to be felt in the state occurred near La Malbaie, Quebec in 1925 measured at magnitude 6.6 at the epicenter. The strongest damaging quakes with an epicenter in the state occurred at Tamworth on December 20 and 24, 1940, both with a measured magnitude of 5.8. At least 262 earthquakes with magnitudes greater than 1.4 and epicenters within New Hampshire have occurred since 1728 (Kathleen Langone, unpublished compilation, 1992). Perhaps the most memorable quake (Gaza Epicenter) was recorded with a magnitude of 4.7 west of Laconia on January 19, 1982, but only minor damage occurred.

The record is complete enough to allow seismologists to compute occurrence probabilities for earthquakes in New England ranging from magnitude 4.6 to 6.0. Thus, earthquakes will continue to occur in New Hampshire with **at least** the same frequency and magnitude as in the past.

Landslide:

The City of Berlin is at moderate risk of landslide events. However, there have been no major recorded landslide events.

Areas at Risk

a. The face of Mt. Forist
b. Ledge area behind the Irving Station
c. Ledge area behind the Berlin High School along the base of Mr. Jasper
d. End of Jasper Street near Mr. Jasper and Upper Church Street

Geomagnetism/Communications:

Areas at Risk:

a. Towers/ Repeater - Enman Hill, Dummer Yard, Fire, Police, Water Works, Pump House, Industrial Park
b. Cates hill
c. Pine Mountain
d. Enman Hill
e. Airport Towers

Radon:

The City of Berlin is at Moderate risk Committee questioned the documented hazards of natural radon.

Areas at Risk:

a. Parts of the City that are have significant areas of ledge as most susecptable to radon. The area adjacent to Mt. Forist have been determined by NHDES has be found to have significant levels of radon.

The state of NH currently has no standard law for response to Radon. The Department of Environmental Services in Concord can facilitate individual questions and needs in regards to Radon.

Tornadoes:

The City is at moderate risk to Tornadoes due to its location in the river valley. Historically, there was one tornado recorded in 1929 that came through Berlin.

Hurricane:

Berlins is at low to risk to Hurricanes. Historically, there has been the Hurricane of 52/53 and 80/81. These resulted in heavy rain and wind as a result. Berlin's largest risk is the flooding as a result of Hurricanes.

Downburst:

There has been recent downburst activity in nearby in Jefferson and Whitefield. The whole City is at moderate risk.

Areas at risk:

a. Power lines
b. Communications

Lightning:

a. Communication Enman Hill and Cates Hill
b. High amount of fuel areas
c. Forested areas
d. Pipeline – should be grounded with anodes – Need to check
e. Airport Fuel Service system had a lightning event.
f. Water works is adding lightning protection
g. Sewer treatment system
h. Fire alarm system and law enforcement wireless network
i. Area power grid

Severe Winter Weather:

a. Extended severe cold
b. Transportation of emergency vehicles
c. Communication
d. Power outage
e. Snow load whether private or public property
f. Hydrants – need to keep them uncovered
g. Fire suppression more difficult in winter – pumps freezing up/ falling from ice
h. Extended cold, and possibly heat, is problem for elderly
i. Wind drift problems on all hilltop and higher elevation locations.

Man Made Hazards:

Potential Risks:

a. Plane hitting the Paper Mill smoke stacks.
b. Portland Natural Gas Transmission System
c. Hazardous Material spills related to the airport, paper mill and railroad.
d. Lack of security around the storage tanks and treatment plant.
e. Motor vehicle accidents can overload the Berlin Emergency Response/EMS.
f. Above ground fuel storage tanks on east side and on the mill and at the airport.

g. Biological/Medical/Mass causality: including community wide illness, communicable diseases, EEE, West Nile Virus, and Pandemic.
h. Public Buildings and gathering places susceptible to terrorist attacks.

Areas at Risk

a. Natural Gas Transmission System
b. Railroad
c. Bridges
d. Dams
e. Paper Mill
f. Municipal Water Supply - Godfree Dam
g. Congested neighborhoods with old multifamily housing with significant code violations, no sprinkler systems, no fire mitigation systems, and significant lack of maintenance and compliance with any and all codes enforced by the City of Berlin.

Note: The City of Berlin and many surrounding organization and large establishment have Emergency Operation Plans. Generally, these plans are on file in the Emergency Management Directors office.

Public Health All Hazard Emergency

Potential Risk

a. Outbreak of communicable disease
b. Failure to have infrastructure to respond to public health outbreak.

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CHAPTER 4
CRITICAL FACILITIES

The Critical Facilities is divided into four categories. The first category contains critical facilities needed for Emergency Response in the event of a disaster. The second category contains critical facilities that are not utilized for Emergency Response. The third category contains people and facilities the Committee wishes to protect in the event of a disaster. The fourth category contains facilities that have been considered as potential resources for services or supplies in the event of a disaster. The "Critical Facilities Map" at the end of this Chapter identifies the facilities in category one, two and three. (More specific contact information can be found in Berlin's Emergency Management Plan with the Emergency Management Director).

Category 1:
Critical Facilities Necessary for Emergency Response

EOC - Police Department (Primary EOC)
Need to identify secondary EOC in the City's Emergency Plan.

Ambulances / EMS – 182 East Mason St Berlin, NH

Berlin Fire Station - 263 Main St Berlin, NH

Berlin Police Station - 135 Green St Berlin, NH

Androscoggin Valley Hospital - 59 Page Hill Rd Berlin, NH

Water Department
Berlin Water Works - 55 Willow St Berlin, NH
St Laurent Lane - Treatment Plant
East Milan Road - Treatment Plant

Public Works Garage Jericho Road Berlin, NH

Berlin Police & EOC

Berlin Fire Department

Public Works Garage *Androscoggin Valley Hospital* *Emergency Medical Services*

Sewer Department
Main office & treatment facility - off Devens St

Shelters
Berlin Recreation Center - Primary
School Dept - Secondary
Churches (get complete list from EOP)

Berlin Recreation Center

Fuel
City of Berlin Public Works with back-up generator

Sources of Communication
Police Department (at station and a stand alone mobile command center)
Fire Dept
Troop F - State Police
Berlin National Guard Armory
Public Service of NH at School St. & Jericho Road has statewide back up
OEM Communications Van

National Guard Armory

Evacuations Routes
Route 16 - North
Route 16 - South
Route 110
East Milan Road
Berlin Airport

Berlin Airport[2]

Bridges on Evacuation Routes
Twelfth Street
Cleveland Bridge
Mason St Milan
Bridge Cascade Hill
Bridge
Footbridge on Bridge Street

Helicopters Landing Sites
Androscoggin Valley Hospital - Berlin
Berlin Airport - Milan, NH
Berlin Ball fields (back-up)

[2] Photo Courtesy of www.greatnorthwoods.org

Public Utilities

Verizon - High St & Emery St
Time Warner Cable - 219 Main St Berlin, NH
WMOU -Radio Station- Pleasant St Berlin, NH
Florida Light & Power – controls flow or river north of Berlin

Transportation

Berlin School System - buses
Tri County Cap - Freedom Express Busing

Category #2:
Facilities Not Necessary For Emergency Response

Bridges & Culverts

Cole St Bridge
Dead River/Main St Bridges

Alternate Evacuation Routes

Success Pond Road

Success Pond Road

Category #3:
Facilities & Population to Protect

Hospital

Androscoggin Valley Hospital - Page Hill Rd

Nursing Homes

St. Vincent - Providence Ave
Coos County - Cates Hill Road

Elderly living

St Regis House - Main St
Northern Lights – 25 Success St
Berlin Housing Authority Apartments - Church St/Cole St

TLC Childcare Center

Assisted Living

Verdun Street Home - Verdun St
Rehab facility - 361 School St
St Kierans Guest House - Emery St

Day Cares

NH Community Technical College - Riverside Dr
Day by Day - Pleasant St
Mini Mounties - c/o Berlin High School
TLC - Mt Forist St
Kids Only – Main Street

Schools

Brown Elementary School - Main St
Hillside Elementary School - Hillside Ave
Berlin Jr. High School - Hillside Ave
Berlin Sr. High School - Madison Ave
St. Michaels Catholic School - Emery St
Tri County Head Start- c/o Guardian Angel School
Marston Kindergarten ONLY - Marston St
New Hampshire Community Technical College – Rt. 16
College for Lifelong Learning - Pleasant St

Hillside Elementary School

High Population Areas

Recreation Center – First Ave
St. Kieran's Community Center for the Arts
Brookside Park
Northern Forest Heritage Park - Main St
Notre Dame arena and recreation Fields
Main Street Community Events
White Mt Chalet - E. Milan Road
Northern NH Correctional Facility (NNHCF)

NNHCF

Historic Landmarks

St Annes Church
Russian Orthodox Church
United Methodist Church
Logging Piers -Heritage Park
Brown House - Heritage Park
Nansen Ski Jump

Russian Orthodox Church[3]

Category 4: Potential Resources (Not on Map)

Materials Supplies

Caron Bldg Center -
White Mtn Lumber - E Milan Rd
Rockingham Electric

Contractors

Ted Lecasse
Hill Street Construction
Couture Construction
AD Excavating
Isaacson Steel

[3] Photo courtesy of www.greatnorthwoods.org

Pike Industries

Transportation
White Mt Ridge Runners
Androsscoggin Valley ATV
School Department Buses

Man Power Resources
Prison has limited people (25-40)
Local businesses (paper mill, Issacson steel, unions)
National Guard
American Red Cross
Public Works/Fire Dept other City employees
Neighboring towns
NH DOT Division 1

Medical Supplies
Pharmacies & AVH
Nursing Homes
Mt Health Services
Coos County Family Health

Gasoline
Berlin Public Works - Jericho Rd
NH DOT in Gorham, NH
National Guard Armory

Agriculture
Berlin Fish Hatchery

Special Needs Populations
Home Health
EMS has partial list
Hospital (lifeline)
Keene Medical
Merriam Graves
AV Home Health
Community Service Center

Potential Food & Water Resources
Schools
Nursing homes & Senior meals site
Local grocery for non-perishables
Pharmacies
Balsams Water on E Milan Rd
National Guard = back-up for water supply
City Fire trucks (2) with 500 gal tanks (not potable water)

CHAPTER 5

CAPABILITY ASSESSMENT

A Review of Existing Policies and Regulations For Hazard Mitigation

The following is a list of current policies and regulations adopted by the City of Berlin that protect people and property from natural hazards. Below is a summary list of policies and regulations. The complete Existing Protection Matrix can be found on the following pages.

Summary of Existing Plans, Programs, Standards & Regulation

Federal

NFIP Floodplain Ordinance

State of NH

Road Design Standards	NH DOT
State Dam Program	NH DES
Shoreline Protection Program	NH DES
Bridge Design Standards	NH DOT
Hazardous Materials	NH BEM
NH RSAs, Policies and Regulations	Multi-agency

Local

Emergency Operations Plan	Emergency Management Director
Zoning Regulations	City Planning/Zoning Officer
Building Code	Building Inspector
Local Bridge Maintenance Program	Public Works Director
Storm Drainage/Culvert Maintenance	Public Work Director
Hazardous Materials Team	Berlin Fire Chief

Integration of Mitigation Priorities into Planning and Regulatory Tools

Many of the existing regulations as noted above can and should be regularly reviewed. This review process can lead to revisions that will incorporate mechanisms to assist in the implementation of the hazard mitigation priorities as defined in this *Plan.* This review should continue to be a priority of the City of Berlin, and will likely include yearly requests in the Capital Improvement Program. Moreover, as suggested in the onset of this document, this *Plan* is a planning tool to be used by the City of Berlin, as well as other local, state, and federal governments, in their effort to reduce future losses from natural and/or man-made hazardous events before they occur. That being said, the

Berlin Planning Board also has the authority, under RSA 674:2 to incorporate this *Plan* as a new section of the Berlin Master Plan, which is strongly recommended. This integration would serve well for any future zoning updates that relate to hazard mitigation, and for the future implementation of the hazard mitigation priorities as defined in this *Plan*.

Under the Prioritized Mitigation Projects *Action Plan* (found in Chapter 6), all parties listed under the Responsibility/Oversight category shall also review this listing annually, and consider the listed (and updated) mitigation projects within their annual budget requests.

Existing Protection	Description/Area Covered	Responsible Local Agent	Effectiveness (Poor, Avg, Good)	Recommended Changes - Actions	Comments
City Emergency Operations Plan	2007 most recent update / whole City covered	EMD	Good	Continued Review and Updates. Plan should be tested annually. .	
Zoning Ordinance of the City of Berlin	Amendments are current	Planning Director Zoning Officer	Average	In process	In process
City Building Code	Continue Enforcement of International Code	Building Inspector	Average		Need to further intergrated communication and interdepartmental strategies
City Housing Code	Continued Enforcement of City Chapter 8 - Housing Code	Housing Inspector	Good		Need to further intergrated communication and interdepartmental strategies
NFIP Floodplain Ordinance	In 1999 Zoning Ordinance	Planning Board and Building Inspector	Good	None at this time	Floodplain Maps Need Updating

Existing Protection	Description/Area Covered	Responsible Local Agent	Effectiveness (Poor, Avg, Good)	Recommended Changes - Actions	Comments
Community Rating System	None	City Planner		Consider Applying for CRS	
Local Road Design Standards	2006 Re-write	Planning Board and Public Works Department	Good	Should be reviewed.	
Bridge Design Standards	State/Dot Bridges	Public Works Director			
Local Bridge Maintenance Program	City-wide	Public Works Director	Good		**IS THIS TRUE**: State inspects all bridges annually. City did an evaluation of all bridges 3 years ago and developed a maintenance plan as a result.
Storm Drainage/Culvert Maintenance Program	City-wide	Public Works Director	Poor/Average		Piping is beyond its life. Need a study to determine existing condition and identify necessary upgrades.
Wellhead Protection Program	Brown Farm and Jericho Lake	Planning Board	Average	Review Ordinance as necessary	
Wetlands Protection	Whole City under the National Wetlands Inventory and Zoning Ordinance	Planning Board	Average	Re-write to match state language	
Shoreline Protection	Androscoggin River	Planning Board	Average	Undesigned area within Urban Compact = need further	Need to consider the Built Urban Area and Industrial

Program				clarification and improvement.	Park.
Existing Protection	**Description/Area Covered**	**Responsible Local Agent**	**Effectiveness (Poor, Avg, Good)**	**Recommended Changes - Actions**	**Comments**
Soil Conservation Program(s)	Natural Resources Conservation Service	Federal	N/A	Identify/designate areas for limited or no development	RE: Community Rating System
Hazardous Materials Plan(s)/Team	Current State Plan	Fire Chief	Average	Maintain Current Hazmat Training Protocals	
CEMPS Program	Berlin SAU 3	Superintendent of SAU	Good	Ongoing training and plan updates	
Incident Command System	Berlin Emergency and Safety Programs And municipal staff	Berlin Fire Chief and EMD	Average	Ongoing training and compliance	Need to continue training and multi agency and municipal department drill of ICS systems
Public Awareness - Education Programs	Ongoing, specific to each department or specialty service	City Departments	Good		
City Master Plan	Re-write in progress	Planning Board	Good	Need to update.	Contractor hires, process funded and project to begin Jan. 2008
City Capital Improvements Plan	Ongoing annual process	City Manager, Planning Board & Council	Good	Seek new funding sources	Process is good, but the overall CIP is annually under funded
Emergency	Hospital, Police Department, Public works (2),	Varies	Avg.		

Back-up Power	Cates Hill Tower, Fire Station, Waste Water, High School				
Existing Protection	**Description/Area Covered**	**Responsible Local Agent**	**Effectiveness (Poor, Avg, Good)**	**Recommended Changes - Actions**	**Comments**
Recipient of Mitigation Grants (HMPG, EMA, FIRE, etc)	EMA Grant 2007 FEMA Fire Grant 2007	N/A	N/A	N/A	
Geographic Information System (GIS)	City Wide	Multi Departmental	Average / Poor	Need additional layers. Needs inter departmental training and utilization	Need additional funding to build capacity.
City Emergency Management Committee	City Wide	EMD	Good	Needs continuing process	

CHAPTER 6
MITIGATION PROJECTS

Categorized Mitigation Projects

In order to identify hazard mitigation projects, the Hazard Mitigation Planning Committee held a brainstorming session, utilizing the following six (6) objectives. The objectives are as follows:

Programs/Policies: Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses. Examples include planning, building codes, capital improvement programs, open space preservation, and storm water management regulations.

Training: Education for emergency response personnel and local officials to maintain the relative qualifications and certification of those personnel. Also to provide general information on emergency response procedures, incident command training and conducting training exercises.

Public Education: Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and school-age and adult education programs.

Structural and Engineering Projects: Actions that identifying the best alternative with a positive cost/benefit ratio and result in minimizing the hazard loss through the construction of brick and mortar projects to reduce the impact of a hazard.

Technology/GIS/Mapping: Actions that result in mapping products that improve the hazard mitigation process as well as emergency response procedures.

Equipment Purchase: Purchase of equipment that aids in the reduction of damages from natural and man-made hazards.

This list was developed during a meeting in which the committee members were to identify a mitigation "wish list". Committee members identified any and all projects that they felt would benefit the community through mitigation actions. This allows for the City to consider every possible mitigation project in one document, no matter how eccentric. Having every alternative documented provides for further discussion and prioritization of all the projects. Discussion on the prioritization of projects can be found on page 6-6. Each items is coded with which hazard it relates to on the chart following the text listing.

The hazard addressed is noted on each item.

PROGRAMS & POLICIES	
ITEM	**HAZARD**
Install a water gauge and monitoring equipment at Jericho Lake and Godfrey Dam that monitors the level of the water (also to be used in conjunction with a Warning System).	DAM BREACH, ICE JAM FLOODING
Wellhead Protection Program: Implement signage and update ordinance.	FLOODING
Hire a full-time building inspector and code enforcement officer for more comprehensive and efficient enforcement. Include the update of 1- and 2-family building code to bring up to 2006 standard.	DEARTHQUAKE,RADON,TORNADOES,HURRICANE, LIGHTNING
Apply for the Community Rating System (CRS).	FLOODING
Support Conservation efforts as appropriate to master planning process.	ALL HAZARDS
Each municipal department will maintain a registry of MSDS relative to their specialty area, the Fire department will assist with technical hazmat and MSDS issues.	MAN-MADE HAZARDS
Establish and implement a new comprehensive warning system.	ALL HAZARDS
Continue to plan and implement “911” changes necessary for compliance and community safety.	ALL HAZARDS
Update and monitor the Emergency Operations Plan.	ALL HAZARDS

TRAINING	
ITEM	**HAZARD**
Water rescue and evacuation training for Fire, EMS. and Fish and Game.	REVERINE FLOODING ICE JAM FLOODING
Elected Officials and City Staff need annual training regarding Hazard Mitigation, Emergency Management, Incident Command System (ICS), Communications, and floodplain requirements, to include at a minimum an annual drill and training for City Staff and Elected Officials. All individuals identified in the City’s Emergency Operations Plan should be “cross-trained” so as to provide additional staff during a large disaster, as well as to notify them of their responsibilities identified in the emergency plan.	ALL HAZARDS

Training for flammable liquid and gas fires.	MAN-MADE HAZARDS, EARTHQUAKE,TORNADOES,HURRICANE
Cross-train City staff on response during an emergency.	ALL HAZARDS
Heavy equipment rescue training for Fire Department and EMS.	MAN-MADE HAZARDS, FLOODING EARTHQUAKE,TORNADOES,HURRICANE, WINTER WEATHER
Continue to plan and execute tabletop exercises as appropriate by department and special hazard mitigation issues.	ALL HAZARDS
Annual Radiological training in response to the recent "Dirty bombs" for Fire, Police and EMS.	MAN-MADE HAZARDS
Collapsed building training for Fire, Police, EMS, Building Department and Public Works.	MAN-MADE HAZARD, EARTHQUAKE, TORNADOES,HURRICANE
The Berlin Airport and the Fire Department should have training and exercise on fuel/oil spills.	MAN-MADE HAZARD, EARTHQUAKE, TORNADOES,HURRICANE
Forestland and wildfire training for all staff.	WILDFIRE
PUBLIC EDUCATION	
ITEM	**HAZARD**
Educate public on the to be established "comprehensive warning system" (as identified in Programs/Policies above). Including the addition of one or more warning whistles – if deemed appropriate with the "new" comprehensive warning system.	ALL HAZARDS
Continue to utilize the relationship with the local radio station and Time-Warner Cable.	ALL HAZARDS
Educate homeowners on flood insurance.	RIVERINE FLOODING, ICE JAM FLOODING
Include Hazard Mitigation and Emergency Management information on the City's website, library, City Hall and Police Department.	ALL HAZARDS
Educate public on the need to have back-up phones that don't need electricity.	ALL HAZARD
Provide public education for contractors and homeowners on the new 2006 building codes, including: 'hint of the week' in the paper; a guidebook for homeowners that compiles all the regulations in an easy-to-read format; generally making people aware of the requirement for a building permit.	MAN-MADE HAZARD, EARTHQUAKE, TORNADOES,HURRICANE
Ensure appropriate copies of all regulations and building codes in all places required by RSAs.	ALL HAZARDS
Maintain zoning and planning regulations at the library & on the City website.	ALL HAZARDS ESPECIALLY MAN-MADE HAZARD, EARTHQUAKE,FLOODING, WINTER WEATHER, TORNADOES,HURRICANE
Educate public, landlords and renters on city ordinances related to incompatible materials in the water and sewer system; floor drains in	ALL HAZARDS ESPECIALLY MAN-MADE HAZARD, EARTHQUAKE,FLOODING, WINTER WEATHER, TORNADOES,HURRICANE

the basement and potential for oil spills.	
STRUCTURAL and ENGINEERING PROJECTS	
Watson Street: Continue to review flood protection to private and public property.	RIVERINE FLOODING, ICE JAM FLOODING, DAM BREACH
East Milan Road: repair road above White Mt. Lumber flooding causes washouts/erosion and road is at risk.	RIVERINE FLOODING, ICE JAM FLOODING, DAM BREACH
Moxie Alley: evaluation of existing studies with a recommendation to reduce flooding in cooperation with the economic development committee.	RIVERINE FLOODING, ICE JAM FLOODING, DAM BREACH
Continue comprehensive drainage study for entire City, including Charron Ave area and Hillside Ave Bridge (need to determine ownership).	FLOODING
On-going evaluation of City owned buildings for structural integrity and determine what long-term improvements are needed. Also an evaluation of the possible risk to health and the working environment at the Public Works garage, Recreations and Parks Building, Police Department, Fire Department and Courthouse.	EARTHQUAKE, RADON,TORNADOES, HURRICAN, LIGHTNING STRIKE, MAN-MADE HAZARD
Water treatment plant needs more fencing and a monitoring system around the water facility and storage tank for security reasons. The Androscoggin Water Treatment Plan needs flood protection to protect the pump system from floodwaters.	MAN-MADE HAZARD
Berlin City Airport needs perimeter fencing, additional lighting as the airport grows, and surveillance cameras linked to the Police Department.	MAN-MADE HAZARD
Continue a security feasibility study of all public places (Police, airport, water supply, sewer plan and switching stations) and implement an action plan from the recommendations. Utilize the Police wireless mesh network to continue security studies.	ALL HAZARDS
Update Flood Insurance Rate Maps, especially Watson Street that exceeds the 100-year floodplain frequently.	REVIRINE FLOODING, ICE JAM FLOODING, DAM BREACH
Study to determine feasibility of installing a dry hydrant/cistern on Cates Hill, the end of Wood Street and the Success Pond area	WILDFIRE, MAN-MADE HAZARD
Evaluate Critical Facilities for retrofit of generators (include the airport and EMS).	EARTHQUAKE, RADON,TORNADOES, HURRICAN, LIGHTNING STRIKE, MAN-MADE HAZARD
Public works garage needs fencing for security purposes.	MAN-MADE HAZARD
TECHNOLOGY & GIS PROJECTS	
Continue comprehensive GIS system,	EARTHQUAKE, RADON,TORNADOES,

including public utilities and floodplains. Investigate possibility of working with the NHCTC to implement the program.	HURRICAN, LIGHTNING STRIKE, MAN-MADE HAZARD
Connect Fire and Emergency Management to the wireless mesh network. Improve inter-departmental communication protocols and equipment	ALL HAZARDS
EQUIPMENT	
Strategic Vehicle Needs • Fire Department - 4-WD vehicle, 6-WD vehicle • Berlin Airport: - Fuel truck and one-ton truck	ALL HAZARDS
Strategic Communication Needs • Police Department: Secondary communication center (permanent), Reverse 911 • Airport: Aviation frequency hand-held radios and City Departmental communication radios. • Compatible digital communication for all Departments including police, fire, EMS, hospital and shelters. • Department of Public Works: Digital radio capability • EMS: Digital radio system with a base at the main office, 12 hand held radios (3 @ public health, 1 @ EMD, 1 @ City Manager and others at the EOC).	ALL HAZARDS
Strategic Technology Needs • Code Enforcement Department: (2) Laptop computers • Computer system at the EOC w/ internet access & networked to GIS software with color printer and plotter. • Expansion of Police Wireless Network to include Fire, EMS, and other related municipal department and community partners.	ALL HAZARDS

PRIORITIZED MITIGATION PROJECTS

The following is the prioritized list of projects, voted on by the Committee. The committee voted by consensus on the top 5 high priority projects for each objective listed on the previous pages. NOTE: The hazard that each item relates to is noted in the column labeled **"HAZARD".**

	Action Plan			
Project	**HAZARD**	**Responsibility/Oversight**	**Funding/Support**	**Timeframe**
	PROGRAMS & POLICIES			
Install a water gauge and monitoring equipment at Jericho Lake and Godfrey Dam that monitors the level of the water (also to be used in conjunction with a Warning System).	Dam Breach Ice Jam Flooding	Water Department Recreation Department	FEMA/NHOEM City Budget	1-2 years
Hire a full-time building inspector and code enforcement officer for more comprehensive and efficient enforcement. Include the update of 1- and 2-family building code to bring up to 2002 standard.	Earthquake Radon Tornadoes Hurricane Lightning	Fire Department	Building Permit Fees City Budget Inspection fees	1-2 years
Establish and implement a new comprehensive warning system.	All Hazards	Emergency Management Director (EMD)	City Budget OEM	1 year
Maintain a registry of MSDS and provide to Fire, Police, EMD and EMS and the AVH.	Man-Made Hazards	Fire Department	N/A	Annually or as appropriate
Implement "911" changes necessary for compliance.	All Hazards	City Engineer	N/A	1 year

~~Project~~	HAZARD	Responsibility/Oversight	Funding/Support	Timeframe
	TRAINING			
Annual training and exercise for Elected Officials and City Staff regarding Emergency Management, Incident Command System (ICS), Communications, and floodplain requirements. All individuals identified in the City's Emergency Response Plan should be "cross-trained" so as to provide additional staff during a large disaster, as well as to notify them of their responsibilities identified in the response plan.	All hazards	Emergency Management Director (EMD)	NH OEM	1 year
Collapsed building training for Fire, Police, EMS, Building Department and Public Works.	Man-Made Hazards Earthquake Tornadoes Hurricane	EMD / Fire Department	FEMA/NH OEM	1-3 years
Hazardous material Training for the Fire Department, Police and EMS.	Man-Made Hazard Earthquake Tornadoes Hurricane	EMD / Fire Department	FEMA/NH OEM	1-3 years
Water rescue and evacuation training for Fire, Police and EMS.	Riverine Ice Jam Flooding Dam Breach	EMD / Fire Department	FEMA/NH OEM	1-3 years
Heavy equipment rescue training for Fire Department and EMS.	All Hazards	EMD / Fire Department	FEMA/NH OEM	1-3 years
PUBLIC EDUCATION				
Educate public on the to be established "comprehensive warning system" (as identified in Programs/Policies above). Including the addition of one or more warning whistles – if deemed appropriate with	All Hazards	the "new"		EMD City of Berlin Local Radio

1-3 years

Project	HAZARD	Responsibility/Oversight	Funding/Support	Timeframe
Educate public, landlords and renters on incompatible materials in the water and sewer system; floor drains in the basement and potential for oil spills.	Downburst Winter Weather Man-Made Hazards	Public Works Director	N/A	1-2 years
Investigate the possibility of a student compiling a public information pamphlet and/or develop and distribute an “emergency card” to the public (include the type of response required of the public depending on the event).	All Hazards	EMD	City Department NHCTC Berlin High School	1-2 years
Ensure appropriate copies of all regulations/building codes in all places required by RSAs.	All Hazards	City Planner	City Budget	1 year
	STRUCTURAL & ENGINEERING			
Moxie Alley: evaluation of existing studies with a recommendation to reduce flooding in cooperation with the economic development committee.	Riverine Flooding Ice Jam Flooding	AVER Berlin City Planner	Private investor AVER City	2 years
Comprehensive drainage study for entire City, including: Charron Ave area and Hillside Ave Bridge (need to determine ownership).	Man Made Hazards Flooding	Public Works Director	City Budget Grants	1-2 years
Evaluate city owned buildings for structural integrity and determine what long-term improvements are needed. Also an evaluation of the possible risk to health and the working environment at all	Man Made Hazards	City owned	City Manager City Council Building & Health D Department s	City Budget Grants

2-3 years

Project	HAZARD	Responsibility/Oversight	Funding/Support	Timeframe
	GIS PROJECTS			
Need a comprehensive GIS system, including public utilities and floodplains.	Riverine Flooding Ice Jam Flooding	City Planner/Public Works	FEMA/NHCTC Berlin High School	2 years
Investigate possibility of working with the NHCTC to implement the program.	Riverine Flooding Ice Jam Flooding	City Planner/Public Works	FEMA/NHCTC Berlin High School	2 years
	EQUIPMENT			
Confined space & heights rescue equipment	Man-Made Hazards Landslide Tornadoes Hurricane	Fire Chief	Grants & Capital Improvement Program	2-3 years
New Police building	All Hazards	Police Chief	Grants & City Budget	2-5 years
Updated salt and sand de-icing facility	Winter Weather Ice Jam Flooding	Public Works Director	City Budget	1-2 years
Purchase 6500 watt generator for EMS	All Hazards	EMS Director		2-3 years
Security monitoring equipment at Godfrey Reservoir	Dam Breach Flooding Landslide	Water Works Department	Grants	1 year
Flood warning system at Jericho Dam with visual & audio alert.	Dam Breach	Police and EMD	Grants	2-3 years
Community warning audible alert device	All Hazards	Public Health	City Budget	1-2 years

CHAPTER 7
STAPLEE REVIEW METHOD

City of Berlin, NH
Hazard Mitigation Plan
January 2008

Modified **STAPLEE** Qualitative Method:

Step 1: Please assign a benefit / cost estimate per item.

Step 2: Use the factors STAPLEE factors (as defined below) in prioritizing the items in our action list, rate 1 through 5;

Social Impact – is this item socially acceptable?
Technical – is this technically feasible and potentially successful?
Administrative Workable – is this a project administration workable?
Political – is it politically acceptable?
Legal – is there legal authority to implement?
Economic – is it economically beneficial?
Environmental – are environmental approvals necessary?

Step 3: Assign Benefit / Cost priority rating A – High, B – Medium, C – low

PUBLIC EDUCATION	**Benefits** (pros)	**Cost** (cons)	**Priority**	**S**	**T**	**A**	**P**	**L**	**E**	**E**	**TOTAL**
Educate public on the established "comprehensive warning system" (as identified in Programs/Policies above). Including the addition of one or more warning whistles – if deemed appropriate with the "new" comprehensive warning system.	- Keep public informed - Protect public from danger/hazards and resulting losses	-cost	A	5	3	3	3	3	3	3	23
Continue to utilize the relationship with the local radio station and Time-Warner Cable.	- Keep public informed - Protect public from danger/hazards and resulting losses	-minimal / free	A	5	3	3	3	3	3	3	23

Educate homeowners on flood insurance	-protects land from flooding -helps public understand the flood insurance program	-cost - limited staff time - effects very few parcels in Berlin, very few flood affected land parcels	B	5	5	5	5	4	5	3	23
Include Hazard Mitigation and Emergency Management information on the City's website, library, City Hall and Police Department.	-expand public access to these plans	NA	A	5	3	3	3	3	3	3	25
Educate public on the need to have back-up phones that don't need electricity.	-protects public in time of emergency	-public having limited funding reducing ability to do this -confusion over phone requirements to meet this need	A	5	3	3	3	3	3	3	25
Provide public education for contractors and homeowners on the new 2006 building codes, including: 'hint of the week' in the paper; a guidebook for homeowners that compiles all the regulations in an easy-to-read format; generally making people aware of the requirement for a building permit;	-provides for a better trained work staff in the community -creates an ongoing communication about building codes and regulations	NA	A	5	5	5	3	3	3	3	27
Maintain zoning and planning regulations at the library & on the City website	-provide public access to this information	NA	A	5	5	5	5	3	NA	NA	23
STRUCTURAL and ENGINEERING PROJECTS	**Benefits** (pros)	**Cost** (cons)	priority	**S**	**T**	**A**	**P**	**L**	**E**	**E**	**TOTAL**
Watson Street: Continue to review flood protection to private and public property.	-protect property and human life from flooding	-staff time cost -technology cost(camera)	A	5	3	3	3	3	3	3	23
East Milan Road: repair road above White Mt. Lumber flooding causes washouts/erosion and road is at risk.	-protect property and human life from flooding	-cost	A	5	3	3	3	3	3	3	23
Moxie Alley: evaluation of existing studies with a recommendation to reduce flooding in cooperation with the economic development committee.	-protect property and human life from flooding	-cost	A	5	5	5	5	5	5	5	35
Continue comprehensive drainage study for entire City, including Charron Ave area and Hillside Ave Bridge (need to determine ownership).	-protect property and human life from flooding	-cost	A	5	5	5	5	5	5	5	35
Water treatment plant needs more fencing and a monitoring system around the water facility and storage tank for security reasons.	-protects infrastructure from damage by vandalism -protects water supply from tampering and contamination	-cost	B	3	5	5	3	3	5	5	29
The Androscoggin Water Treatment Plan needs flood protection to protect the pump system from floodwaters.	-protects infrastructure from flood damage	-cost	A	3	5	5	3	3	5	5	29

Berlin City Airport needs perimeter fencing.	-protects infrastructure from damage by vandalism -protects equipment and vehicles from tampering	-cost	B	3	3	3	3	3	5	3	23
Update Flood Insurance Rate Maps.	-protects infrastructure from damage from flooding	-staff time cost -technology needs -cost to implement changes	B	5	5	3	NA	NA	4	NA	17
Study to determine feasibility of installing a dry hydrant/cistern on Cates Hill and other areas as directed by the Fire Chief.	-protects infrastructure from damage from fire -increases number of hydrants available for use	staff time cost -cost to install equipment	A	5	5	5	5	NA	5	NA	25
TECHNOLOGY & GIS PROJECTS	**Benefits** (pros)	**Cost** (cons)	priority	**S**	**T**	**A**	**P**	**L**	**E**	**R**	**TOTAL**
Continue comprehensive GIS system, including public utilities and floodplains	-improved mapping of community including hazard sites	-technology needs to develop maps and produce maps -staff training and outreach to other department to maximize use	B	3	3	3	3	3	NA	1	16
Connect Fire and Emergency Management to the wireless mesh network	-improved information access and use -improved communication capability -improved time management	-cost	A	3	3	3	3	3	3	3	21
Improve inter-departmental communication protocols and equipment	-improved information access and use -improved communication capability -improved time management	-cost	A	5	5	5	5	5	5	5	35
EQUIPMENT **designed to contribute to a strategic planning related to hazard mitigation**	**Benefits** (pros)	**Cost** (cons)	priority	**S**	**T**	**A**	**P**	**L**	**E**	**E**	**TOTAL**
2. Fire Department: Rescue Strategic Planning Equipment • Confined space and heights rescue equipment • Rescue equipment • Replace life safety ropes • Water rescue equipment • Hazardous Material equipment • 4-WD vehicle • 6-WD vehicle	-improved firefighter potential with improved / advanced equipment for all types of fires	-cost	A	3	4	5	3	3	4	4	26

• Hydraulic jacks for collapsed building rescue. • Submersible pumps												
3. Police Department: Communication Strategic Planning Equipment • Secondary communication center (permanent). • Reverse 911	-improved police, inter-department, inter-agency communication -expanded public safety through 911 services - allow for hazard communication with citizen	-cost	A	4	5	5	3	5	4	3	29
4. Berlin Airport: • Fuel truck and one-ton truck	-improved airport equipment to respond to airport needs including hazard mitigation	-cost	C	2	4	4	3	2	5	3	23
5. Inter-departmental: Communication Strategic Planning • Compatible digital communication for all Departments including police, fire, EMS, hospital and shelters. • Aviation frequency hand-held radios and City Departmental communication radios. • Community warning audible alert device • Emergency Management Digital radio system with a base at the main office, 12 hand held radios (3 @ public health, 1 @ EMD, 1 @ City Manager and others at the EOC	improved police, inter-department, inter-agency communication	-cost	A	2	5	5	3	3	4	3	25
6. Berlin Emergency Medical Services (EMS): • (1) 6500 watt generator	- improved inter-department, inter-agency communication	-cost -cross jurisdiction	B	3	5	4	3	2	3	3	23
7. **Technology Strategic Inter-Departmental Planning** **Code Enforcement Department:** • (2) Laptop computers • Testing equipment (electrical, GSI instruments, tools, safety equipment) • Video camera **Water Works Department:** • Monitoring cameras for the following locations: Godfrey Reservoir,	- Improved technology use by department noted	- cost - departments having different resources and developing at different rates -commitment of the city to train staff	B	3	5	5	4	3	5	3	28

Forbush Tanks, Lancaster Tank, Coulombe Pond Tank, Treatment Plants, Cates Hill Tank, and Androscoggin Plant. • Digital communications for access to the Godfrey dam in average conditions. **Public Health / EMD / EOC:** • Computer system at the EOC w/ internet access & networked to GIS software with color printer and plotter.											
8. Hazard Mitigation Vehicle Strategic Planning List • Snowmobile, Humvee, small mobile generator • Androscoggin Valley Hospital Motor Boat	-improved transportation for rugged terrain found in the City -improved transportation for winter travel	- cost of purchase -cost of maintenance	B	3	4	5	3	3	4	3	25
9. Public Health All Hazard Strategic Planning • Development of an Neighborhood Care Center and fully supply for activation. • Development of an Acute Care Center and fully supply for activation. • Development of a Point of Distribution Center and fully supply for activation.	-increased ability to respond to sick during emergency periods -increased planning between community partners -increased potential to have secured location and supplies for emergency event	NA	A	3	4	5	3	5	3	3	26

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CHAPTER 8
ADOPTION, IMPLEMENTATION & MONITORING

Adoption

The Berlin City Council by majority vote officially adopted the *Berlin Hazard Mitigation Plan* on February_____, 2010. This plan identifies Mitigation Actions to be implemented as outlined in the "Prioritized Mitigation Projects" in Chapter 6.

Implementation

There were over 25 mitigation projects that were prioritized by the Committee. For each project the Committee identified who, when and how they would be implemented. Please refer to the "Prioritized Mitigation Projects" list in Chapter 6 for details on the top forty-three projects.

It will be the future responsibility of the City Manager and Emergency Management Director to ensure implementation of these Prioritized Projects.

Monitoring & Updates

In order to track progress and update the Mitigation Projects identified in Chapter 6, it is recommended that the *Berlin Hazard Mitigation Plan* will be reviewed annually or after a presidentially declared disaster. The Emergency Management Director is responsible for initiating this review and needs to consult with members of the Berlin Emergency Management Committee, in order to track progress and update the Prioritized List in Chapter 6. Changes should be made to the Plan to accommodate for projects that have failed or are not considered feasible. Priorities that were not ranked high should be reviewed as well during the monitoring and update of this Plan to determine feasibility of future implementation.

The public will continue to be invited and involved during this process. This will require the posting of two public notices, and where appropriate by posting a notice on the City's Web Site. Updates to the *Plan* may be adopted subsequent to a public meeting or hearing by the City Council.

ANNEX I

CITY OF BERLIN, NH
A RESOLUTION APPROVING THE
BERLIN HAZARD MITIGATION PLAN

Date: February_____, 2010

WHEREAS, the City of Berlin received funding from the NH Bureau of Emergency Management to assist in the preparation of the Berlin Hazard Mitigation Plan; and

WHEREAS, several public meetings and committee meetings were held between September 2007 and February 2010 regarding the development and review of the Berlin Hazard Mitigation Plan; and

WEREAS, the Berlin Hazard Mitigation Plan contains several potential future projects to mitigate hazard damage in the City of Berlin; and

WEREAS, a public meeting was held by the City Council on February, 2010 to formally approve and adopt the Berlin Hazard Mitigation Plan.

NOW, THEREFORE, BE IT RESOLVED that the Berlin City Council approves the Berlin Hazard Mitigation Plan.

APPROVED and SIGNED this _____ day of February____, 2010.

Mayor City Council Date

Emergency Management Director Date

Seal of Authority

(See Attached Original Resolution)

ANNEX II

The City of Berlin
The Berlin Health Department

168 Main Street, Berlin, NH 03570 (603) 752-1272, bhdnurse@ncia.net

To: General Public
Berlin City Council Members
Berlin Department Heads
Gorham, Randolph, Shelburne, Milan, Dummer EMDs, Fire Chief, Police Chief, Superintendent of Schools
Heidi Lawton, NHOEM
Berlin Daily Sun
Berlin Reporter

From: Laura Lee Viger, Berlin EMD

RE: Please plan on attending this Public Hearing

Public Hearing Agenda Date,
6:00 p.m., Berlin City Hall Date to be determined following FEMA approval

6:00 Introduction – Laura Lee Viger, EMD

6:10 Purpose and Value of Hazard Mitigation Planning - Laura Lee Viger, EMD

6:15 Question & Answer Period –

6:30 Public Comments

ANNEX III

Berlin Wildfire Hazard Mitigation Plan

Prepared for the New Hampshire Bureau of Emergency Management

Winter 2006/2007

Prepared by North Country Council, Inc.
107 Glessner Road Bethlehem, NH 03574

NOTE: Available at berlinnh.gov